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	15 and 112	6	<u>L13</u>
<u>L13</u>		193	<u>L12</u>
<u>L12</u>	16 and 111	8917	<u>L11</u>
<u>L11</u>	19 and 110	46739	<u>L10</u>
<u>L10</u>	13 and 14		
<u>L9</u>	17 and 18	33384	<u>L9</u>
<u>L8</u>	non\$1woven or un\$1woven	44556	<u>L8</u>
<u>L7</u>	fabric or textile	174706	<u>L7</u>
<u>L6</u>	durable same (non\$1woven or un\$1woven) same (fabric or textile)	476	<u>L6</u>
		855	<u>L5</u>
<u>L5</u>	precursor same web	137183	<u>L4</u>
<u>L4</u>	nylon	185289	<u>L3</u>
<u>L3</u>	polyester	7	<u></u> <u>L2</u>
<u>L2</u>	4941884		
<u>L1</u>	3485706	304	<u>L1</u>

END OF SEARCH HISTORY

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# Search Results - Record(s) 1 through 7 of 7 returned.

☐ 1. Document ID: US 20010009832 A1

L2: Entry 1 of 7

File: PGPB

Jul 26, 2001

PGPUB-DOCUMENT-NUMBER: 20010009832

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010009832 A1

TITLE: Flame resistant fabrics

PUBLICATION-DATE: July 26, 2001

INVENTOR-INFORMATION:

NAME

CITY

COUNTRY STATE

RULE-47

Shaffer, Donald E.

Wilmington

DE

US US

Ghorashi, Hamid M.

Midlothian

VA

US-CL-CURRENT: 442/181; 442/203, 442/208, 442/209

ABSTRACT:

The present invention provides a woven flame resistant fabric comprising dissimilar warp and fill yarns, the warp yarns comprise staple or filament fibers and have a Limiting Oxygen Index of at least 27, and the fill yarns comprise natural fibers and wherein the ratio of warp to fill yarn ends in the fabric is at least 1.0.

# Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KMIC | Draw Desc | Image |

## ② 2. Document ID: US 5876849 A

L2: Entry 2 of 7

File: USPT

Mar 2, 1999

US-PAT-NO: 5876849

DOCUMENT-IDENTIFIER: US 5876849 A

TITLE: Cotton/nylon fiber blends suitable for durable light shade fabrics containing

carbon doped antistatic fibers

DATE-ISSUED: March 2, 1999

INVENTOR-INFORMATION:

NAME

CITY

ZIP CODE STATE

COUNTRY

Green; James

Bonita Springs

FL

US-CL-CURRENT: 428/359; 428/362

### ABSTRACT:

Cotton/nylon fiber blends have been discovered which are suitable for use in the warp yarns of durable fabrics dyed in light shades with permanent antistatic properties.

4 Claims, 0 Drawing figures Exemplary Claim Number: 1

# Full Title Citation Front Review Classification Date Reference Sequences Attachments Claims KMIC Draw Desc Image

## ☐ 3. Document ID: US 5759207 A

L2: Entry 3 of 7

File: USPT

Jun 2, 1998

US-PAT-NO: 5759207

DOCUMENT-IDENTIFIER: US 5759207 A

TITLE: Flat duck greige fabrics suitable for processing into flame resistant fabrics with low shrinkage

DATE-ISSUED: June 2, 1998

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Green; James R.

Bonita Springs

FL

US-CL-CURRENT: 8/115.7; 427/393.3, 442/143, 442/189, 442/214, 442/215, 442/216, 442/301,  $8/127.\overline{1}$ , 8/139, 8/195, 8/490, 8/494

## ABSTRACT:

Improved flat duck griege cotton/thermoplastic fiber blend fabrics have been discovered which are suitable for processing into flame resistant fabrics with low laundry shrinkage while maintaining high resistance to molten metal.

15 Claims, 0 Drawing figures Exemplary Claim Number: 1

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KMC Draw Desc Image

## ☑ 4. Document ID: US 5482763 A

L2: Entry 4 of 7

File: USPT

Jan 9, 1996

US-PAT-NO: 5482763

DOCUMENT-IDENTIFIER: US 5482763 A

TITLE: Light weight tear resistant fabric

DATE-ISSUED: January 9, 1996

INVENTOR-INFORMATION:

NAME

STATE

ZIP CODE

COUNTRY

Shaffer; Donald E.

Wilmington

CITY

DΕ

US-CL-CURRENT: 442/214; 139/420A, 139/420R, 139/426R, 442/220

## ABSTRACT:

A light weight tear resistant fabric having a background fabric and reinforcing yarns selected such that the tensile strength of the reinforcing yarn is about two times that of the yarns of the background fabric and the elongation of the reinforcing yarns is at least two times that of the background fabric is described. The resulting reinforced fabric has at least 50% greater tear resistance than the background fabric as measured by the Elmendorf test.

10 Claims, 2 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |

KMC Draw Desc Image

☐ 5. Document ID: US 5447787 A

L2: Entry 5 of 7

File: USPT

Sep 5, 1995

US-PAT-NO: 5447787

DOCUMENT-IDENTIFIER: US 5447787 A

TITLE: Reinforced fabric

DATE-ISSUED: September 5, 1995

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Shaffer; Donald E.

Wilmington

DE

US-CL-CURRENT:  $\underline{442}/\underline{2}$ ;  $\underline{139}/\underline{35}$ ,  $\underline{139}/\underline{410}$ ,  $\underline{139}/\underline{413}$ ,  $\underline{139}/\underline{414}$ ,  $\underline{139}/\underline{420A}$ ,  $\underline{139}/\underline{426R}$ ,  $\underline{428}/\underline{340}$ ,  $\frac{428}{902}$ ,  $\frac{428}{920}$ ,  $\frac{442}{205}$ ,  $\frac{442}{218}$ ,  $\frac{442}{46}$ 

## ABSTRACT:

A reinforced fabric composed of a background fabric and a reinforcing grid that is joined to the background fabric so that the grid reinforced fabric is at least 20% stronger than a fabric into which reinforcing yarns of the same type and weight percent as that of the grid have been integrally woven.

10 Claims, 3 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 3

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KMC Draw Desc Image

☐ 6. Document ID: US 5223334 A

L2: Entry 6 of 7

File: USPT

Jun 29, 1993

US-PAT-NO: 5223334

DOCUMENT-IDENTIFIER: US 5223334 A

TITLE: Electric arc resistant lightweight fabrics

DATE-ISSUED: June 29, 1993

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Green; James R.

Hockessin

DΕ

US-CL-CURRENT: 442/214; 428/364, 428/373, 428/920

## ABSTRACT:

Woven fabrics wherein the warp yarns contain specified amounts of heat resistant fibers blended with cotton fiber provide protection against radiation given off by electric arcs.

6 Claims, 0 Drawing figures Exemplary Claim Number: 1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |

KMC Draw Desc Image

## ☑ 7. Document ID: US 4941884 A

L2: Entry 7 of 7

File: USPT

Jul 17, 1990

US-PAT-NO: 4941884

DOCUMENT-IDENTIFIER: US 4941884 A

TITLE: Comfortable fabrics of high durability

DATE-ISSUED: July 17, 1990

INVENTOR-INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Green; James R.

Hockessin

DE

US-CL-CURRENT: 8/120; 264/342RE, 264/80, 8/125

## ABSTRACT:

Woven fabrics from blends of high and low modulus fibers provide comfort plus high durability to hard surface abrasion.

11 Claims, 4 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 2

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KWMC Drawi Desc Image

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4941884S	0
"4941884".USPT,PGPB.	7
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## **Search Results** - Record(s) 1 through 6 of 6 returned.

[7] 1. Document ID: US 20020007540 A1

L13: Entry 1 of 6

File: PGPB

Jan 24, 2002

PGPUB-DOCUMENT-NUMBER: 20020007540

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020007540 A1

TITLE: Imaged nonwoven fabrics

PUBLICATION-DATE: January 24, 2002

INVENTOR-INFORMATION:

NAME Black, Samuel K.

Curtis, Charles Keith

CITY

Raleigh Benson

NC NC

STATE

COUNTRY US

US

US

RULE-47

NC Willow Springs Carlson, Cheryl L.

US-CL-CURRENT: 28/105; 28/106

### ABSTRACT:

A method of forming durable nonwoven fabrics by hydroentanglement includes providing a precursor web comprising a fibrous matrix of staple length fibers and/or substantially continuous filaments. The precursor web is subjected to hydroentanglement on a three-dimensional image transfer device to create a patterned and imaged fabric. Enhanced imaging is achieved by advancing the precursor web onto the movable imaging surface of the image transfer device at a rate substantially equal to the rate at which the image surface moves relative to one or more associated hydroentangling manifolds. Treatment with a polymeric binder composition enhances the integrity of the fabric, permitting it to exhibit desired physical characteristics, including strength, durability, softness, and drapeability. Mechanical compaction of the imaged and patterned fabric, such as by sanforizing, enhances the desired physical properties.

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KMMC Draw, Desc Image

## 2. Document ID: US 20020002764 A1

L13: Entry 2 of 6

File: PGPB

Jan 10, 2002

PGPUB-DOCUMENT-NUMBER: 20020002764

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020002764 A1

TITLE: Durable and drapeable imaged nonwoven fabric

PUBLICATION-DATE: January 10, 2002

INVENTOR-INFORMATION:

COUNTRY RULE-47 STATE CITY NAME US NC Fuquay-Varina Putnam, Michael J. NC US Angier Hartgrove, Herbert P. NC US Clayton Rabon, Robert Gregory

US-CL-CURRENT: 28/104; 442/327, 442/408

### ABSTRACT:

A nonwoven fabric, and method of production, are disclosed, wherein the nonwoven fabric comprises textile length fibers with a portion being thermally fusible. The fabric exhibits sufficient durability to withstand commercial dyeing processes, with the resultant fabric finding widespread applicability by virtue of its durability and aesthetic appeal.

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KMMC | Drawl Desc | Image

## 7 3. Document ID: US 6080482 A

L13: Entry 3 of 6

File: USPT

Jun 27, 2000

US-PAT-NO: 6080482

DOCUMENT-IDENTIFIER: US 6080482 A

TITLE: Undrawn, tough, durably melt-bondable, macodenier, thermoplastic,

multicomponent filaments

DATE-ISSUED: June 27, 2000

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY Martin; Philip G. Forest Lake MN

Olson; Gary L. Shoreview MN Welygan; Dennis G. Woodbury MN

US-CL-CURRENT: 428/373; 428/374, 442/361, 442/364

### ABSTRACT:

Undrawn, tough, durably melt-bondable, macrodenier, thermoplastic, multicomponent filaments, such as sheath-core and side-by-side filaments, comprising a first plastic component and a second lower-melting component defining all or at least part of the material-air boundary of the filaments. The filaments can be made by melt-extruding thermoplastics to

form hot filaments, cooling and solidifying the hot filaments, and recovering the solidified filaments without any substantial tension being placed thereon. Aggregations of the filaments can be made in the form of floor matting and abrasive articles.

18 Claims, 30 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 5 Full Title Citation Front Review Classification Date Reference Sequences Attachments

KOMC Draw Desc Image

## ☑ 4. Document ID: US 5972463 A

L13: Entry 4 of 6

File: USPT

Oct 26, 1999

US-PAT-NO: 5972463

DOCUMENT-IDENTIFIER: US 5972463 A

TITLE: Undrawn, tough, durably melt-bondable, macrodenier, thermoplastic,

multicomponent filaments

DATE-ISSUED: October 26, 1999

INVENTOR - INFORMATION:

NAME

CITY

STATE

ZIP CODE

COUNTRY

Martin; Philip G.

Forest Lake Shoreview

MN MN

Olson; Gary L.

MN

Welygan; Dennis G.

Woodbury

US-CL-CURRENT:  $\frac{428}{95}$ ;  $\frac{428}{373}$ ,  $\frac{428}{374}$ ,  $\frac{428}{96}$ ,  $\frac{442}{352}$ ,  $\frac{442}{362}$ ,  $\frac{442}{364}$ ,  $\frac{442}{48}$ 

## ABSTRACT:

Undrawn, tough, durably melt-bondable, macrodenier, thermoplastic, multicomponent filaments, such as sheath-core and side-by-side filaments, comprising a first plastic component and a second lower-melting component defining all or at least part of the material-air boundary of the filaments. The filaments can be made by melt-extruding thermoplastics to form hot filaments, cooling and solidifying the hot filaments, and recovering the solidified filaments without any substantial tension being placed thereon. Aggregations of the filaments can be made in the form of floor matting and abrasive articles.

20 Claims, 30 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 5

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KMMC | Draw Desc | Image

## ☐ 5. Document ID: US 5811186 A

L13: Entry 5 of 6

File: USPT

Sep 22, 1998

US-PAT-NO: 5811186

DOCUMENT-IDENTIFIER: US 5811186 A

TITLE: Undrawn, tough, durably melt-bonded, macrodenier, thermoplastic, multicomponent filaments

DATE-ISSUED: September 22, 1998

INVENTOR-INFORMATION:

COUNTRY ZIP CODE STATE CITY NAME MN

Forest Lake Martin; Philip G. MN Shoreview Olson; Gary L. MN Woodbury Welygan; Dennis G.

US-CL-CURRENT: 428/373; 428/374

### ABSTRACT:

Undrawn, tough, durably melt-bondable, macrodenier, thermoplastic, multicomponent filaments, such as sheath-core and side-by-side filaments, comprising a first plastic component and a second lower-melting component defining all or at least part of the material-air boundary of the filaments. The filaments can be made by melt-extruding thermoplastics to form hot filaments, cooling and solidifying the hot filaments, and recovering the solidified filaments without any substantial tension being placed thereon. Aggregations of the filaments can be made in the form of floor matting and abrasive articles.

15 Claims, 30 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 5

> KMMC | Draw Desc | Image Full Title Citation Front Review Classification Date Reference Sequences Attachments

## ☐ 6. Document ID: US 5071681 A

L13: Entry 6 of 6

File: USPT

Dec 10, 1991

US-PAT-NO: 5071681

DOCUMENT-IDENTIFIER: US 5071681 A

TITLE: Water absorbent fiber web

DATE-ISSUED: December 10, 1991

INVENTOR-INFORMATION: COUNTRY ZIP CODE STATE CITY NAME WΙ

Appleton Manning; James H. WΙ Menasha Makoui; Kambiz B. WI Neenah Hollenberg; David H.

US-CL-CURRENT: 427/392; 427/393, 442/118, 442/67, 604/374, 604/375

## ABSTRACT:

A fibrous web having an enhanced capacity for water absorption is produced by impregnating an absorbent fabric with a polymer or copolymer capable of forming by cross-linking an absorbent polymer or copolymer and subsequently heating the treated fabric effecting cross-linking of the polymer to form an absorbent polymer. The product may comprise a non-woven fibrous web or mat having a water-insoluble binder on one surface and a cross-linked hydrophilic polymer or copolymer on its opposite surface.

12 Claims, 2 Drawing figures Exemplary Claim Number: 1 Number of Drawing Sheets: 2

Full   Title   Citation   Front   Review   Classification   Date   Reference   Sequences   Attachments	KMMC   Drawl Desc   Image
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